Title (en)
INFORMATION PROCESSING SYSTEM, INFORMATION PROCESSING METHOD, AND PROGRAM

Title (de)
INFORMATIONSVERARBEITUNGSSYSTEM, INFORMATIONSVERARBEITUNGSVERFAHREN UND PROGRAMM

Title (fr)
SYSTÈME DE TRAITEMENT D'INFORMATIONS, PROCÉDÉ DE TRAITEMENT D'INFORMATIONS ET PROGRAMME

Publication
EP 4089594 A4 20240703 (EN)

Application
EP 21738948 A 20210108

Priority
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- JP 2021000582 W 20210108

Abstract (en)
[origin: EP4089594A1] [Problem] To use machine learning to perform numerical analysis appropriately.[Solution] An information processing system 1 is provided with an objective data acquisition unit 212 and a numerical analysis processing unit 213 (or structure inference unit 316). The objective data acquisition unit 212 acquires data of the object of numerical analysis (or a design simulation of a construction) expressed as a mesh shape. The numerical analysis processing unit 213 (or structure inference unit 316) uses a machine learning model obtained by performing machine learning on the result of numerical analysis of physical properties (or a design simulation of a construction) in units of relationships between two adjacent nodes in graph data corresponding to a mesh shape to acquire an inference result inferring a result of numerical analysis (or a result of a design simulation of a construction) for the object of numerical analysis (or a design simulation of a construction). [Selected Figure] Figure 10

IPC 8 full level
G06F 30/12 (2020.01); G06F 30/23 (2020.01); G06F 30/27 (2020.01); G06N 20/00 (2019.01); G06F 111/06 (2020.01); G06F 119/14 (2020.01); G06N 5/01 (2023.01)

CPC (source: EP US)
G06F 30/12 (2020.01 - EP US); G06F 30/23 (2020.01 - EP); G06F 30/27 (2020.01 - EP US); G06N 20/00 (2019.01 - EP); G06F 2111/06 (2020.01 - EP); G06F 2119/14 (2020.01 - EP); G06N 5/01 (2023.01 - EP)

Citation (search report)
- [XI] ALET FERRAN ET AL: "Graph Element Networks: adaptive, structured computation and memory", 17 November 2019 (2019-11-17), pages 1 - 16, XP093112947, Retrieved from the Internet <URL:https://arxiv.org/abs/1904.09019> DOI: 10.48550/arxiv.1904.09019
- [I] QINGYANG TAN ET AL: "Realtime Simulation of Thin-Shell Deformable Materials using CNN-Based Mesh Embedding", 16 December 2019 (2019-12-16), XP081558113, Retrieved from the Internet <URL:https://arxiv.org/abs/1909.12354v3> DOI: 10.48550/arXiv.1909.12354
- [I] YAN XINGHUI ET AL: "Aerodynamic shape optimization using a novel optimizer based on machine learning techniques", AEROSPACE SCIENCE AND TECHNOLOGY, vol. 86, 7 February 2019 (2019-02-07), pages 826 - 835, XP085623367, DOI: 10.1016/J.AST.2019.02.003
- [I] JONATHAN VIQUERAT ET AL: "Direct shape optimization through deep reinforcement learning", ARXIV.ORG, 23 August 2019 (2019-08-23), XP081470218
- See also references of WO 2021141131A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 4089594 A1 20221116; **EP 4089594 A4 20240703**; CA 3163900 A1 20210715; CN 114930338 A 20220819; CN 114930338 B 20240301; JP 2021111066 A 20210802; US 2023044533 A1 20230209; WO 2021141131 A1 20210715

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EP 21738948 A 20210108; CA 3163900 A 20210108; CN 202180008636 A 20210108; JP 2020001766 A 20200108; JP 2021000582 W 20210108; US 202117791480 A 20210108